

REMARKS

In response to the Official Action mailed on June 14, 2005, reconsideration of the rejections of the claims is respectfully requested in view of the following remarks.

Claims 1 - 6 were rejected under 35 USC 103(a) as unpatentable over Sato '033 (U.S. Patent No. 6,492,033) in view of either Kato '102 (JP 55-134102) or Kato '103 (JP 55-134103). This rejection is respectfully traversed because there is no motivation in the references to combine them in the manner proposed in the Official Action.

Sato '033 discloses a lead-free plain bearing formed by dispersing an alloy powder on a backing plate and sintering the powder to the backing plate. In addition to containing Sn, Ag, and Cu, the alloy powder may include MoS₂ powder or graphite powder.

Kato '102 and Kato '103 both relate to molded bearings which contain Cu-coated graphite. According to the Official Action, it would have been obvious from either of these references to have modified Sato '033 to have employed Cu-coated graphite powder instead of uncoated graphite powder.

The error in this argument is that the reasons why Kato '102 and Kato '103 employ Cu-coated graphite are inapplicable to the bearing disclosed in Sato '033, and for this reason a person skilled in the art would not be motivated by the references to modify Sato '033 in the manner proposed by the Official Action.

Kato '102 discloses a bearing formed by cold pressing of a

powder mixture followed by sintering. This references teaches the use of Cu-coated graphite in the powder mixture which is to be cold pressed to enable Cu powders in the mixture to adhere to each other. According to page 5, lines 8 - 19 of Kato '102, the reason for using Cu-coated graphite is as follows:

By using this Cu-coated graphite as a sintering raw material, compared to the case in which graphite is blended in Cu powder, the layers of Cu plated on the surface of the graphite particles strongly adhere to each other at the time of molding, and a molded body uniformly containing a large amount of graphite is obtained. Namely, if graphite powder or MoS₂ powder is simply mixed with Cu powder, these solid lubricants form a state in which they adhere to each individual Cu powder particle, and at the time of pressing the powder, they completely prevent the Cu powders from adhering to each other and they make it impossible to form a compressed molded body, but by sealing the graphite lubricant in the Cu plating layer, a strong matrix can be formed just by adhesion of the metal Cu. (emphasis added)

Thus, as is clear from the bold text in the above quote, the only advantage of using a Cu-coated graphite found in this reference is for use in cold-pressing to form a molded body to be subsequently sintered. However, no such step of cold pressing exists in Sato '033. In Sato '033, a bearing alloy powder is dispersed on a metal backing plate and then sintered. Since Sato '033 does not include a cold pressing step, which is the sole reason for using Cu-coated graphite in Kato '102, a person skilled in the art could find no motivation in Sato '033 or Kato '102 to modify Sato '033 to employ Cu-coated graphite, since the references teach no advantages to doing so that would be applicable to Sato '033.

Kato '103 likewise relates to an article which is totally

different in nature from the bearing disclosed in Sato '033. Kato '103 teaches a bearing formed by sintering under pressure ("hot-pressure molding") of a powder mixture to form a molded article. In contrast, as stated above, the bearing of Sato '033 is formed by dispersing a bearing alloy powder on a metal backing plate to form a thin layer and then sintering the layer to adhere it to the backing plate. Kato '103 does not teach any advantage to employing Cu-coated graphite except in the formation of a hot pressure molded article, and since Sato '033 does not relate to a hot pressure molded article, there is nothing in Kato '103 that would suggest to a person skilled in the art to use Cu-coated graphite in the manufacture of the bearing of Sato '033.

Accordingly, as there is no motivation in any of the references to modify Sato '033 in the manner proposed in the Official Action, the Official Action does not set forth a *prima facie* of obviousness with respect to claims 1 - 6. These claims are therefore allowable. Claims 7 - 11 have already been allowed.

In light of the foregoing remarks, it is believed that the

present application is in condition for allowance. Favorable consideration is respectfully requested.

Respectfully submitted,



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